**Review - Derivatives and Integrals – 2 Sides of a Coin**

It is important that we think of derivatives and integrals not as two completely separate topics but rather as two sides of a coin.

Give a definition of each term below:

***Derivative:***

***Integral:***

The picture below comes from an AP Free Response problem. I have erased the actual question so that we can simply use this as context to review these concepts.



1. If we were define g(x) to be the position of an object on the time interval [-5, 4], then what quantity would the graph above represent?
2. What would be the velocity of the object at time t = 0?
3. What would be the acceleration of the object at time t = -1?
4. What would be the change in position of the object from time t = -5 to time t = 0?
5. If the position at time t = -3 is 0, what would be the position at time t = 2?
6. At what time(s) does the object change direction?
7. When would the object be the furthest away from a position of 0? What would be its position at this time?
8. Sketch a graph of the acceleration of the object as a function of time.
9. Over what interval(s) would the graph of position be concave up?
10. Sketch a graph of the position of the object as a function of time.